WHITTINGTON'S DICTIONARY OF PLASTICS

by

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bis(Alkylthio) Cadmium. A stabilizer for PVC.

Allobar. A form of an element having different atomic weights and thus differing in isotropic composition from the naturally occurring form of the element.

Allomerism. A similarity of crystalline form with a difference in chemical composition. See POLYALLOMERS.

Allophanamide. See BIURET.

Allotrophy. The ability of a substance to exist in two or more solid, liquid or gaseous forms due to differences in the arrangement of atoms or molecules.

Alloy. A term sometimes used in the plastics industry to denote blends of polymers or copolymers with other polymers or elastomers. An example is a blend of styrene-acrylonitrile copolymer with butadiene-acrylonitrile rubber. The term *polyblend* is sometimes used for such mixtures.

Allyl. (n) The unsaturated radical C_3H_5, which upon liberation forms diallyl, C_6H_{10}, a pungent volatile liquid.

Allyl Alcohol. CH_2:$CHCH_2OH$. (propenyl alcohol, AA, 2-propen-1-ol). A colorless liquid with a characteristic pungent odor, obtained from the hydrolysis of allyl chloride (from propylene) with dilute caustic, or by the dehydration of propylene alcohol. It is a basic material for all allyl resins, and its esters are used as plasticizers.

Allyl Aldehyde. See ACROLEIN.

Allyl Chloride. CH_2CHCH_2Cl. (3-chloropropene, alpha-chloropropylene, AC, chloroallylene) Used in the preparation of allyl alcohol and various thermosetting resins.

Allyl Cyanide. CH_2:$CHCH_2CN$ (3-butenenitrile, vinyl-acetonitrile). Used as a crosslinking agent.

Allyl Diglycol Carbonate. (ADC) A colorless, water-clear monomer which can be polymerized and cast into a variety of transparent, optical grade products. The thermosetting polymer has the highest scratch and abrasion resistance of all transparent plastics. It can be copolymerized with other unsaturated monomers such as vinyl acetate or methyl methacrylate to produce polymers with a wide variety of properties.

Allyl Diglycol Carbonate Resins. Thermosetting resins with outstanding optical clarity, good abrasion resistance and mechanical properties. The resins are made by polymerizing the monomer of the same name with catalysts such as benzoyl peroxide or, preferably, diisopropyl peroxy dicarbonate. The monomer may also be copolymerized with a variety of monomers and unsaturated compounds such as vinyl acetate, methylmethacrylate and maleic anhydride to yield copolymers with a wide range of properties.

Allyl Esters. Esters of allyl alcohol, used in the production of plasticizers and resins.

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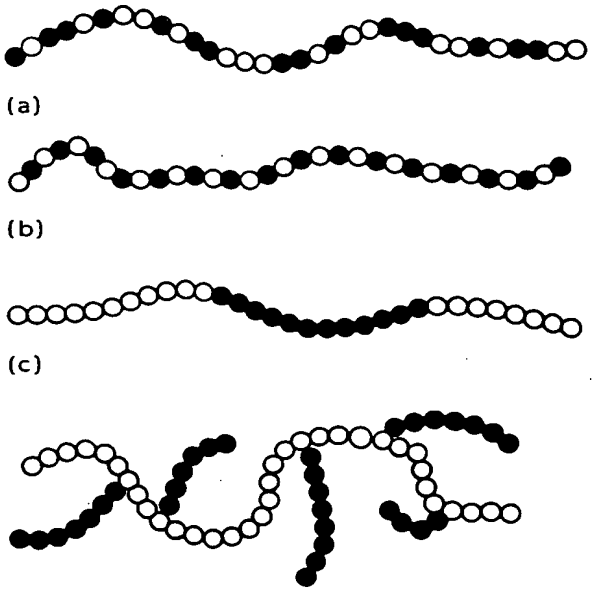

FIG. 1.4 Copolymer arrangements: (a) Two different types of mers (denoted by open and filled circles) are randomly placed. (b) The mers are alternately arranged. (c) A block copolymer. (d) A graft copolymer.

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Copolymerization, which may be compared to alloying in metallurgy, is very useful for synthesizing polymers with the required combination of properties. For example, polystyrene is brittle, and polybutadiene is flexible; therefore copolymers of styrene and butadiene should be more flexible than polystyrene but tougher than polybutadiene. The general-purpose rubber GRS (or SBR), the first practical synthetic rubber, is a copolymer of styrene and butadiene.